

VERSION SHOWING THE AMENDMENTS TO THE CLAIMS:

This listing replaces any prior listing of the claims.

Claims:

1. (Currently amended) A magnetically actuatable apparatus for a control system comprising:

a ~~sensor-contact~~ mountable to a first support member, said sensor having a contact that is being movable between an open electrical state and a closed electrical state in the presence of magnetic flux, and

a magnetic actuator for ~~selectively~~ actuating the contact, said magnetic actuator being mountable to a second support member that is displaceable relative to the first support member, wherein said magnetic actuator has a lateral side and an elongated magnetic field of like polarity extending along the lateral side to form an effective region of magnetic flux having a magnitude and direction that is greater than a magnetic field for a given magnet, wherein the an effective region of magnetic flux allows ~~of a magnitude and direction in excess of a region of magnetic flux for a given magnet so that the first support member can~~ to be displaced relative to the second support member a magnitude and direction in excess of the magnitude and direction of displacement obtainable using the given magnet, without a change in the electrical state of the contact.

2. (Currently amended) The apparatus as recited in claim 1, wherein the sensor comprises first and second reeds that electrically control the flow of current to the system control system is a physical monitoring system.

3. (Previously amended) The apparatus as recited in claim 1, wherein the magnetic actuator comprises a plurality of spaced apart, alike aligned magnetic fields

arranged adjacent to one another along the second support member, wherein each of the plurality of magnetic fields has a pole of polarity that overlaps with a like pole of polarity of an adjacent magnet to further define the effective region of magnetic flux.

4. (Currently amended) The apparatus as recited in claim 1, wherein the magnetic actuator comprises an elongated magnet having opposing north and south magnetic components that extend laterally on opposite sides of the magnetic actuator ~~relative to one another pole of polarity along a lateral side to further define the effective region of magnetic flux.~~

5. (Original) The apparatus as recited in claim 4, wherein the effective region of magnetic flux has a magnitude and direction that duplicates at least two aligned, alike magnetic fields that are arranged with overlapping like magnetic fields.

6. (Currently amended) The apparatus as recited in claim 1, wherein the sensor contact is a reed switch having a first contact member and a second contact member, wherein at least one of the aforesaid contact members defines an axis that is arranged transverse to the effective region of magnetic flux.

7. (Currently amended) The apparatus as recited in claim 6, wherein the first contact member is displaceable relative to the second contact member to open and to close the switch ~~the contact and the control system is an alarm.~~

8. (Currently amended) The apparatus as recited in claim 7, wherein the contact is in the open electrical state in the presence of the effective region of magnetic flux.

9. (Currently amended) The apparatus as recited in claim 8, wherein the contact is in the closed electrical state in the presence of the effective region of magnetic flux.

10. (Currently amended) The apparatus as recited in claim 1 7, wherein the magnetic actuator allows the first support member to be displaced relative to the second support member in excess of about one inch without a change in the electrical state of the sensor alarm is settable when the contact is in the open state.

11. (Currently amended) The apparatus as recited in claim 8, wherein the system is an alarm that is settable when the contact is in the closed state.

12. (Currently amended) The apparatus as recited in claim 7, wherein the system is an alarm that is not-settable when the contact is in the open state.

13. (Currently amended) The apparatus as recited in claim 8, wherein the reed switch is oriented normal to the magnetic actuator alarm is not settable when the contact is in the closed state.

14. (Currently amended) A magnetically actuated apparatus for use with an electrically operated control system, said apparatus comprising:

a an electrically operated sensor control device mountable to a first support member that is adapted to move relative to a second support member, said sensor control device including having a contact member that moves intermediate an open condition and a closed condition in response to magnetic flux to operate the sensor control system, and

a magnetic actuator mountable to the second support member for actuating the sensor control device, said magnetic actuator having an a lateral side and an elongated

magnetic field of like polarity extending along the lateral side to form an effective region of magnetic flux of a first magnitude and a first direction in excess of a region of magnetic flux of a given magnet having a second magnitude and a second direction,

wherein the effective region of magnetic flux is aligned normal to the magnetic actuator to allows the first support member to move relative to the second support member a greater distance than obtainable using the region of magnetic flux of the given magnet, without a change in the condition of the sensor control device.

15. (Original) The apparatus as recited in claim 14, wherein the control system is an alarm system.

16. (Original) The apparatus as recited in claim 15, wherein the control system is a physical monitoring system.

17. (Original) The apparatus as recited in claim 14, wherein the magnetic actuator comprises an assembly of aligned, alike magnetic fields having opposed magnetic fields of opposite polarity of a given magnitude, wherein like magnetic fields of each magnet overlap to further define the effective region of magnetic flux.

18. (Original) The apparatus as recited in claim 14, wherein the magnetic actuator comprises an elongated magnet having a longitudinal axis, opposed sides and an elongated magnetic field of like polarity extending laterally along said longitudinal axis intermediate the opposed sides, wherein said elongated magnetic field duplicates overlapping magnetic fields of alike magnets to further define the effective region of magnetic flux.

19. (Currently amended) The apparatus as recited in claim 14, wherein the sensor control device is a switch having includes a first contact member and a second

contact member adapted to move relative to the first contact member in the presence of magnetic flux to control the flow of electric current to the control system.

20. (Currently amended) A magnetically operated apparatus for use with an electrically operated system, the apparatus comprising:

a sensor mountable to a first support structure that is adapted to move relative to a second support structure, the sensor including having a first contact member that is adapted to move relative to a second contact member in the presence of magnetic flux to open and close a circuit electrically connected to the system, and

a magnetic assembly adapted to operatively interact with the sensor, the magnetic assembly being mountable to a second support member and having an elongated magnetic field of like polarity that is aligned traverse to said first contact member, said elongated magnetic field defining an effective region of magnetic flux to actuate the sensor, said effective region of magnetic flux having a given magnitude and a given direction that is in excess of the magnetic flux of a given magnet,

wherein the effective region of magnetic flux allows the first support member to move relative to the second support member a distance having a magnitude that is greater than the magnitude that is obtained using the given magnet.

21. (Previously amended) A magnetically actuated apparatus for opening and closing an electric circuit, the apparatus being adapted for use with first and second support members arranged for displacement relative to one another, wherein the apparatus comprises:

a sensor connected to the electric circuit having an open and a closed state, the sensor being mountable to the first support member and comprising a first contact member arranged for displacement relative to a second contact member,

a magnetic actuator mountable to the second support member, the magnetic actuator comprising a plurality of alike, aligned magnetic fields for selectively displacing one of said contact members, each magnetic field having a pole of opposite polarity and a region of magnetic flux of a first magnitude in a given direction wherein like poles of the plurality of magnetic fields are arranged adjacent to one another to provide an effective magnetic flux region of a second magnitude that is greater than the first magnitude in the given direction of any one of said plurality of magnetic fields, the effective magnetic flux region being used to displace one of said contact members,

whereby the effective magnetic flux region allows the first and second support members to be displaced relative to one another in a given direction for a given magnitude, that is greater than the displacement obtainable by the first and second members using the magnetic flux of any one of the magnet, without a change in the electric condition of the sensor.

22. (Original) The apparatus as recited in claim 21, wherein the sensor is a reed switch.

23. (Previously amended) The apparatus as recited in claim 21, wherein the plurality of magnetic fields is formed by a pair of alike magnetic fields, each magnetic field having a north pole and a south pole and is oriented with like poles aligned with one another.

24. (Previously presented) The apparatus as recited in claim 23, wherein each of the alike magnetic fields has a longitudinal axis extending about the north and south poles, that is normal to an axis defined by at least one of said contact members.

25. (Original) The apparatus as recited in claim 21, wherein the electric circuit is connected to a security monitoring system.

26. (Original) The apparatus as recited in claim 25, wherein the security monitoring system is settable when the sensor is in either the closed state or the opened state.

27. (Original) The apparatus as recited in claim 21, wherein the magnetic flux of each magnet overlaps to further define the effective region of magnetic flux.

28. (Original) The apparatus as recited in claim 27, wherein the plurality of magnetic fields is mounted so that the effective region of magnetic flux is oriented normal to at least one of said contact members.

29. (Original) The apparatus as recited in claim 28, wherein the first support member is displaceable within a first plane relative to a second plane defined by the second support member, wherein each magnet moves in a given direction relative to at least one of the contact members.

30. (Original) The apparatus as recited in claim 21, wherein the plurality of magnetic fields are attached to a bar that further defines the effective region of magnetic flux.

31. (Original) The apparatus as recited in claim 30, wherein the first support member is fixed and the second support member is movable.

32. (Original) The apparatus as recited in claim 21, wherein the effective region of magnetic flux defines an effective gap in which the second support member is displaceable relative to the first support member, having a given magnitude and a given direction greater than if one magnet is used.

33. (Previously amended) The apparatus as recited in claim 21, wherein the first support member is a frame and the second support member is a window.

34. (Original) The apparatus as recited in claim 21, further comprising a magnetizable member magnetized by alike poles of the plurality of magnetic fields, to further define the effective region of magnetic flux.

35. (Original) The apparatus as recited in claim 34, wherein the plurality of magnetic fields comprise a plurality of magnets connected to the magnetizable member that are spaced apart from each other such that the magnetic flux of each magnet does not overlap.

36. (Original) The apparatus as recited in claim 35, wherein the magnetizable member is a steel bar.

37. (Previously canceled)

39. (Previously canceled)

40. (Previously canceled)

41. (Previously canceled)

42. (Previously canceled)

43. (Currently amended) A magnetically actuated apparatus for opening and closing an electric circuit, the apparatus being adapted for use with first and second

supports arranged for displacement relative to one another, wherein the apparatus comprises:

a switch secured to the first support to control the flow of electric current to the electric circuit, the switch ~~assembly having a switch that includes~~ including a first contact member arranged for displacement relative to a second contact member to open and close the switch, the first contact member having a switch axis,

a plurality of spaced magnets secured to the second support, each magnet having a pole of opposite polarity wherein like poles of each magnet are arranged with their respective magnetic fluxes contiguous to provide a combined region of magnetic flux that is greater than a region of magnetic flux of each magnet, the combined region of magnetic flux being transverse to the switch axis,

wherein said switch is in an open state when the first contact member is spaced apart from the second contact member,

wherein said switch is in a closed state when the first contact member is in close proximity to the second contact member in the presence of the combined region of magnetic flux, the combined region of magnetic flux biasing the first contact member near the second contact member to permit electricity to flow to the circuit, and

whereby the combined region of the magnetic flux permits the first support and the second support to move relative to one another a greater predetermined distance obtainable using the region of magnetic flux of each magnet, without a change in the open or closed condition of the switch.

44. (Withdrawn)

45. (Withdrawn)

46. (Withdrawn)

47. (Withdrawn)

48. (Withdrawn)

49. (Withdrawn)

50. (Withdrawn)

51. (Withdrawn)

52. (Withdrawn)

53. (Withdrawn)

54. (Currently amended) A method of providing a magnetically actuated apparatus for opening and closing an electric circuit, the apparatus being adapted for use with first and second supports arranged for displacement relative to one another, wherein the method comprises:

providing a sensor connected to the electric circuit having an open and a closed state, the sensor switch being mountable to the first support member and comprising a first contact member arranged for displacement relative to a second contact member,

providing a magnetic actuator for selectively actuating the sensor, said magnetic actuator being mountable to a second support member that is displaceable relative to the first support member, wherein said magnetic actuator has an elongated magnetic field with like magnetic polarity extending along a lateral side of the magnetic actuator, said elongated magnetic field defining an effective region of magnetic flux, plurality of spaced apart, alike aligned magnetic fields associated with the second support member for selectively displacing one of said contact members, each magnet having a pole of opposite polarity and a region of magnetic flux of a first magnitude in a given direction

~~wherein like poles of the plurality of magnets are arranged adjacent to one another to provide an effective magnetic flux region of a second magnitude that is greater than the first magnitude in the given direction of any one of said plurality of magnets, the effective magnetic flux region being used to displace one of said contact members,~~

whereby the effective magnetic flux region allows the first and second support members to be displaced relative to one another in a given direction for given a magnitude, that is greater than the displacement of the first and second members relative to the magnetic flux of a given magnet ~~any one of the magnets~~, without any change in the electric condition of the sensor.

55. (Previously amended) A magnetically-actuated switch for use with a first structure arranged for displacement relative to a second structure for opening and closing an electric connection, the switch comprising:

a sensor mountable to the second structure, the sensor comprising a first member that is arranged for displacement relative to a second member between an open condition and a closed condition to open and close the electric connection in response to magnetic flux, the first member defining a first axis,

a magnetic actuator arranged to be secured to the first structure, the magnetic actuator having a plurality of aligned, alike magnetic fields being substantially aligned adjacent to one another to form a second axis, wherein each magnetic field has a pole of opposite polarity such that like poles are arranged adjacent to one another to define an effective region of magnetic flux having a flux magnitude in excess of a region of magnetic flux of any one magnet, the effective region of magnetic flux being aligned along the second axis,

wherein the switch is open when the first member and the second member of the sensor are displaced away from one another so that electrical current cannot flow through the electric connection, and

wherein the switch is closed when the first member and the second member of the sensor are within close proximity to one another to allow electrical current to flow through the electric connection,

whereby the effective region of magnetic flux permits the first structure to be displaced relative to the second structure over a desired first distance having an effective displacement magnitude greater than a second distance defined by the magnetic flux of any one of the plurality of magnets, so that the switch will remain closed.

56. (Previously amended - previously added) A magnetically actuated apparatus for use with first and second support structures arranged for movement relative to one another, the apparatus being used to control an electric connection, the apparatus comprising:

a control device mountable to the first support structure for opening and closing the electric connection, the control device comprising a magnetically actuated contact for controlling electric current flowing to the electric connection in response to magnetic flux, the contact having an open state and a closed state, wherein the contact moves between the open state and the closed state within a predetermined magnetic actuation area,

a plurality of like magnets mountable to the second support structure for actuating the contact, each magnetic being arranged adjacent to one another and having alike opposed magnetic fields of opposite polarity of a given magnitude, wherein the magnetic fields of the plurality of magnets combine to form a first and second effective magnetic

actuator fields of opposite polarity, wherein each effective magnetic field is capable of moving the contact from the open state to the closed state, wherein each magnetic actuator field has a given magnitude of magnetic flux that is greater than the given magnitude of magnetic flux of any one of the magnets of like polarity, wherein at least one of the magnetic actuator fields is oriented transverse to the magnetic actuation area,

wherein the at least one effective magnetic actuator field allows the first structure to move relative to the second structure in a given direction of a desired distance that is greater in magnitude of the movement of the first structure relative to the second structure with respect to any one of the plurality of magnets, without a change in the electric condition of the control device.

57. (Previously added) The magnetically actuated apparatus as recited in claim 56, wherein the contact is in the open state in the absence of magnetic flux.

58. (Previously added) The magnetically actuated apparatus as recited in claim 56, wherein the contact is in the closed state in the presence of magnetic flux.

59. (Previously added) The magnetically actuated apparatus as recited in claim 56, wherein the contact is in the closed state in the absence of magnetic flux.

60. (Previously added) The magnetically actuated apparatus as recited in claim 56, wherein the contact is in the open state in the presence of magnetic flux.

61. (New) A magnetically actuated apparatus for an electric circuit comprising:
a sensor having a contract that is movable between an open electrical state and a closed electrical state in the presence of magnetic flux, the sensor being mountable to a first support member that is displaceable relative to a second support member, and

a magnetic actuator for actuating the contact, the magnetic actuator being mountable to the second support member and including a plurality of alike magnetic fields aligned adjacent to one another along an elongated lateral side of the actuator, wherein said plurality of alike magnetic fields combine to form an effective region of magnetic flux having a magnitude and direction that is greater than the magnitude and direction of a magnetic field of a given magnet, said effective region of magnetic flux allowing the first support member to be displaced relative to the second support member a greater distance than obtainable using the given magnetic field, without a change in the electrical state of the contact.

62. (New) A magnetically actuated apparatus for an electric circuit comprising:

a sensor having a contract that is movable between an open electrical state and a closed electrical state in the presence of magnetic flux, the sensor being mountable in a first support member that is displaceable relative to a second support member, and

a magnetic actuator for actuating the contact, the magnetic actuator being mountable to the second support member and including an elongated magnet having a longitudinal axis and an elongated magnetic field of like polarity extending along said longitudinal axis, wherein said elongated magnetic field duplicates overlapping magnetic fields of alike magnets to form an effective region of magnetic flux having a magnitude and direction that is greater than the magnitude and direction of a magnetic field of a given magnet, said effective region of magnetic flux allowing the first support member to be displaced relative to the second support member a greater distance than obtainable using the given magnetic field, without a change in the electrical state of the contact.

63. (New) A magnetically actuatable apparatus for a control system comprising:

a switch mountable to a first support member, said switch having a contact movable between an open electrical state and a closed electrical state in the presence of magnetic flux, said contact defining an axis, and

a magnetic actuator for actuating the contact, said magnetic actuator being mountable to a second support member that is displaceable relative to the first support member, wherein said magnetic actuator has a lateral side and an elongated magnetic field of like polarity extending along the lateral side to form an effective region of magnetic flux, wherein said elongated field is aligned normal to the axis of the contact and the effective region of magnetic flux has a magnitude and direction that is greater than the magnitude and direction of a magnetic field for a given magnet, wherein the effective region of magnetic flux allows the first support member to be displaced relative to the second support member a magnitude and direction in excess of the magnitude and direction of displacement obtainable using the given magnet, without a change in the electrical state of the contact.